

Personal Combined Stimulator

(KM-BT1000)



KMG

K. M. G (Kumyoung)

WWW.KM01.CO.KR

Table of Contents

1. Features
2. Low Frequency Stimulator Components
3. Installation and Cautions
4. Name of Parts and Feature Description
5. How to Use
6. Troubleshooting
7. Electrical and Mechanical Characteristics
8. Repair and A/S
9. Items
10. Product Warranty

1. Features

This device applies current to the body through abdominal and low frequency pads and is used to ease muscular pains. The device generates low frequency signals ranging from 1~500[KHz] and has various built-in auto mode programs which are designed to automatically control the frequency/stimulation type according to the preset mode. First-time users can easily operate the device with a few button settings or use the manual mode to freely operate the frequency/stimulation type as the user intends. Also, the device features a sophisticated and comfortable design and the abdominal pads have a heating function built-in which can set the temperature to OFF, 30°C, 35°C, 40°C ($\pm 4^\circ\text{C}$). A safety device(bimetal) is embedded to automatically cut off the heater power in case the internal temperature overheats.

- FND/LED display window is used
 - FND/LED display window is used for sophisticated design and for users to easily judge the current status while using the device.
- Frequency generated via a digital method
 - By generating low frequency signals through a digital method, the frequency output is more stabilized.
- Various built-in auto mode programs
 - Automatic frequency mode is built-in for user convenience. Auto mode can be set with a few button touches.
- Two independent frequency outputs(for two-person use)
 - There are two frequency outputs separated circuit-wise and the two channels can each start/stop and operate independently regardless of the mode.
- Automatic saving of most recently used setting
 - The most recently used setting for the operating time and mode are automatically saved so the setting is maintained even when the power is turned ON/OFF.
- Low frequency level LED display bar
 - The frequency output level is displayed to produce a vivid and stereoscopic view using a 10-stage bar to show the mode change and frequency type.
- Abdominal pads with built-in heating function
 - The abdominal pads with an ergonomic design have the frequency function and heating function implemented which can be independently operated.

2. Low Frequency Stimulator Components

This device is composed of the main body, abdominal pads(2), low frequency pads(8) and a power cable. The following lists the details.



Main body
(front)



Main body
(back)



Abdominal and low
frequency pads



Power cable

- Components

Main body : 1

Abdominal and low frequency pads : Abdominal(2), Low frequency(8)

Power cable : 1

User manual : 1

3. Installation and Cautions

- Precautions before use
 - Move the device to a dry and unheated place.
Remove moisture or dust in the connecting part of the control panel.
 - Check that the device is grounded and the rated power is AC 220[V], 60[Hz] before plugging in the power cable.
Thoroughly read the User Manual.
 - Connect the low frequency and abdominal pads to the pad connection and abdominal pad connection in the main body.
 - Check if the low frequency and abdominal pads are clean.
 - First clean the area to be stimulated and check the skin surface.
 - Sufficiently apply the gel to effectively send low frequency to the stimulated area of the low frequency and abdominal pads.

- Caution for Patients
 - Do not use for following : Those who have cardiac problems, are pregnant, are high-fevered, **성종양환자**, have an injury on the contact area, and are diagnosed by the physician to be unfit.
 - Do not use on patients with transplanted electronic devices without the approval of a physician.
 - Always check on the patient state when device is in use.
 - Adjust the treatment time and level according to the individual's physical strength and responsiveness.
 - Do not use near the head, face or heart.
 - Immediately stop use when trouble/defect is found.

- Cautions on use
 - (1) Cautions on use
 - ① Take care not to surpass the diagnosis and treatment time
 - ② Watch for abnormality in device and patient during use.
 - ③ In case of an abnormality, take necessary measures such as stopping the device when the patient is in a safe condition.
 - ④ Do not use the device unless trained.
 - ⑤ In case of a defect/trouble, mark the area and leave it to specialists for repair.
 - ⑥ Do not use other than its intended use.

 - (2) Storage conditions
 - ① Store in a dry place.
 - ② Store in place which is not affected by air pressure, temperature, humidity, ventilation, sunlight, dust and salt content in air.
 - ③ Take caution in the safety state including the slope, vibration and impact(including when driving).
 - ④ Do not store where chemicals are stored or where gas is generated.
 - ⑤ Take regular inspections on device and parts.
 - ⑥ When using the device which has not been used for a while, check the cleanliness and operation state before use.

4. Name of Parts and Feature Description



Main body
(front)

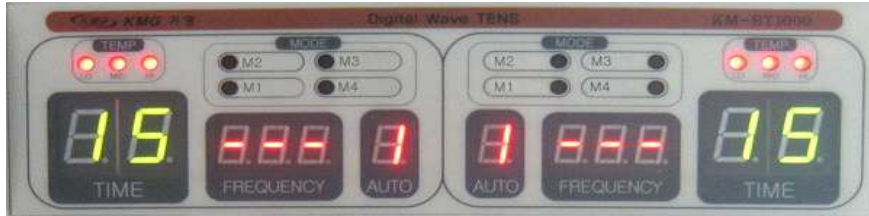


Main body
(back)

No.	Name	Function
①	TEMP button	Button to set the temperature (OFF, LOW, MID, HI setting)
②	AUTO button	Button to set AUTO (auto mode #1~ #9) manual mode (“-”)
③	MODE button	Button to set MODE (M1, M2, M3, M4)
④	Frequency button	Button to set Frequency (1, 3, 5, 7, 10, 20, 50, 100, 250, 500Hz)
⑤	AUTO display	Auto setting display window
⑥	MODE display	Mode setting display window
⑦	TIME button	Button to set Time (Up, Down) Set between 1 ~ 60 minutes
⑧	TIME display	Time display window
⑨	TEMP display	Temperature setting LED (OFF, LOW, MID, HI display)
⑩	POWER button	Power On/Off button
⑪	Abdominal pad LED display bar	Abdominal pad output level LED display bar
⑫	Abdominal pad control knob	Abdominal pad output level control knob
⑬	Pad control knob	Pad output level control knob
⑭	Pad control knob	Pad output level control knob
⑮	Pad connection	Connection for connecting the pad
⑯	Abdominal pad connection	Connection for connecting the abdominal pad
⑰	POWER switch	Switch to turn On/Off the device power
⑱	Power connection	Connection for the power plug (double fuse embedded)
	Left-right symmetric function	Left-right symmetric function to be used in two-person device

1. Names and Functions of Parts in Upper Area

The upper area is composed of the device control panel. This section will give a brief description on the names of the parts and functions. Please refer to the 'How to use' section for description on using the stimulator.



FND & LED display unit

[M2: WAVE, M3: PRESS, M1: MASSAGE, M4: ROLLING]







Central control unit

- TIME UP/DOWN key : This is the button to control the low frequency output time. If the time is set in a suspended state, the time will be automatically saved when the power goes off. If set during the low frequency output, it will extend the low frequency output time.

FND display window will display (Min.:1 minute, Max.:60 minute) depending on the TIME UP/DOWN key settings.

- FREQUENCY UP/DOWN key : This is the button to control the low frequency output frequency. FND display window will display (1, 3, 5, 7, 10, 20, 50, 100, 250, 500Hz) depending on the FREQUENCY UP/DOWN key. Manual control can be done.

-  TEMP key : This is the temperature control key for the abdominal pad and settings include OFF, LO, MID, HI which set the temperature to OFF, 30°C, 35°C, 40°C respectively.
-  AUTO key : This is the AUTO setting button which sets to Auto mode(#1~#9) or manual mode("-"). Details are described in the 'How to use' section.
-  MODE key : This is the MODE setting button which selects between 4 built-in modes (M1, M2, M3, M4).
-  START/STOP key : This switch is used when starting the device to start or stop the low frequency output.
- INTENSITY volume : When turning in clockwise direction from the zero position, a "tick" sound will be heard and the low frequency output will start. When turning in the counter clockwise direction, a "tick" sound will be heard and the low frequency output will be stopped.

5. How to use

1. Preparations before use

- ① Check the power voltage(220V).
- ② Thoroughly read the User Manual.
- ③ Place the device in a comfortable position.
- ④ Plug in the power cable.
- ⑤ Remove moisture or dust from the connecting part of the control panel.

2. How to use and order of use

1) How to use

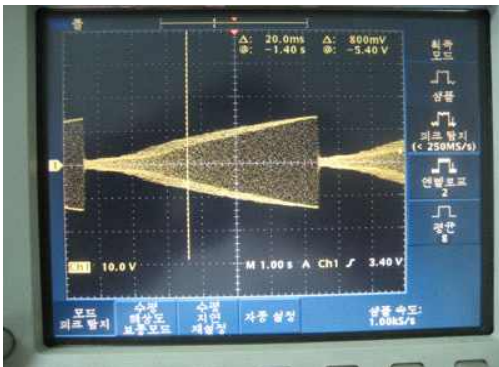
- ① Check if all switches are at zero or "0" position.
- ② Connect each of the low frequency pads to the pad connection on the main body.
- ③ Connect the abdominal pads to the abdominal pad connection on the main body.
- ④ Turn on the power switch in the front of the main body.
- ⑤ First clean the area to be stimulated and check the skin surface.
- ⑥ Check if the low frequency and abdominal pads are clean.
- ⑦ Attach the low frequency and abdominal pads to the area to be stimulated.
- ⑧ Use according to the order described in the following section.
After use, place back to the original state in reverse order of its use.
- ⑨ After using the low frequency and abdominal pads, sterilize with 70% isopropyl alcohol to keep clean.

2) Order of use

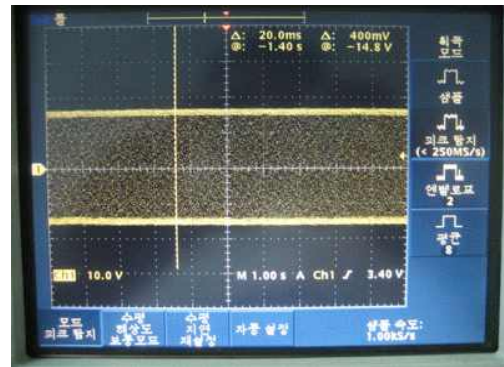
(1) Fixed frequency stimulation method

Fixed frequency stimulation is used for repeated stimulation of a fixed frequency set as the output of the low frequency device. The output signal is divided into M1, M2, M3, M4 and the following describes how to use it.

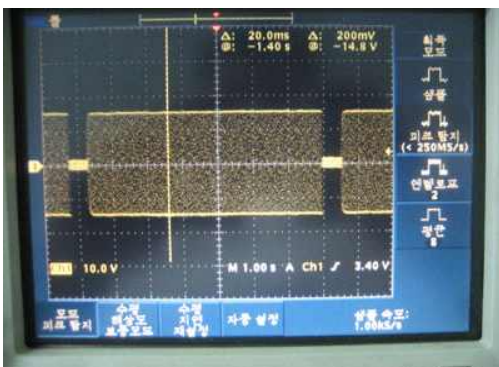
Waveform shape	Characteristic
M1 (MASSAGE)	The amplitude gradually increases and then returns to the initial value. This is repeated.
M2 (WAVE)	Outputs the basic waveform without amplitude changes.
M3 (PRESS)	Repeats applying the electric current and then pausing without amplitude changes.
M4 (ROLLING)	Amplitude changes are gradually increased and then decreased periodically. This is repeated.



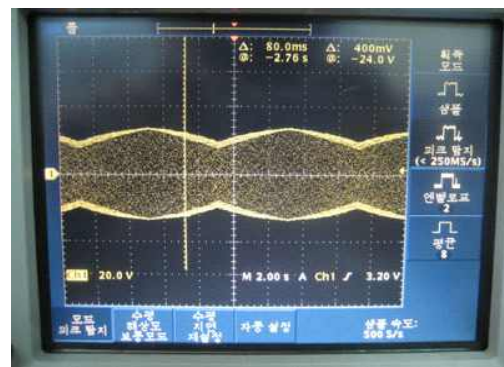
M1 Mode [MASSAGE]



M2 Mode [WAVE]



M3 Mode [PRESS]

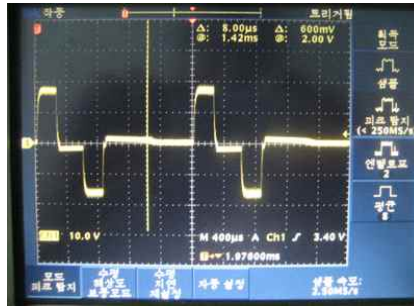


M4 Mode [ROLLING]

- ① Turn on the power switch. If the output control volume is not in the zero position, then the Zero Start alert will be notified.
- ② Press the UP/DOWN button in AUTO mode and select (“-”) fixed frequency.
- ③ Press the Frequency setting button and select the frequency(1, 3, 5, 7, 10, 20, 50, 100, 250, 500Hz).

Output frequency : (1, 3, 5, 7, 10, 20, 50, 100, 250, 500Hz)

- Pulse shape definition : Up-down symmetrical trapezoidal waveform



- ④ Press the UP/DOWN button in MODE and select the MODE output type.
- ⑤ Press the UP/DOWN button in TIME and select the operating time.
- ⑥ Attach the low frequency and abdominal pads to the area to be stimulated.
- ⑦ Turn the output control volume to start the low frequency output.
- ⑧ Turn the output control volume to the intended output level.
- ⑨ When the preset stimulation time has ended, the termination sound will be sounded while the signal is blocked.
- ⑩ When the preset stimulation time has ended, the termination sound will be sounded while the signal is blocked.
- ⑪ When the device is not in use, take out th power plug.

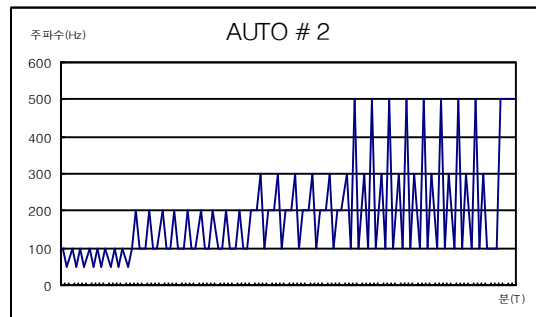
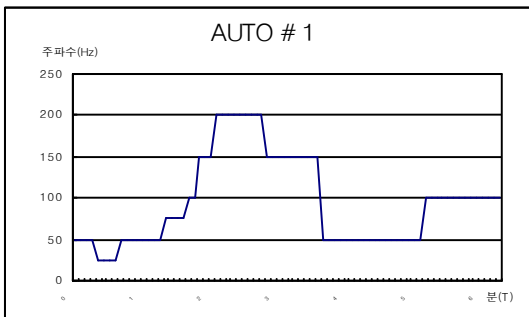
(2) AUTO MODE(programmed stimulation)

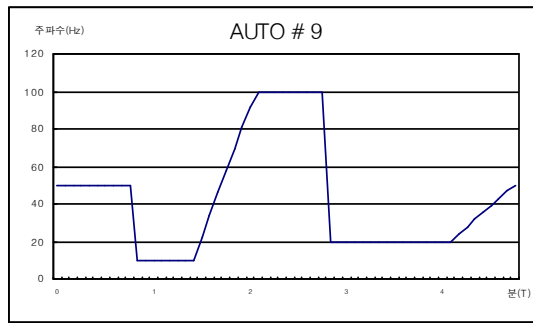
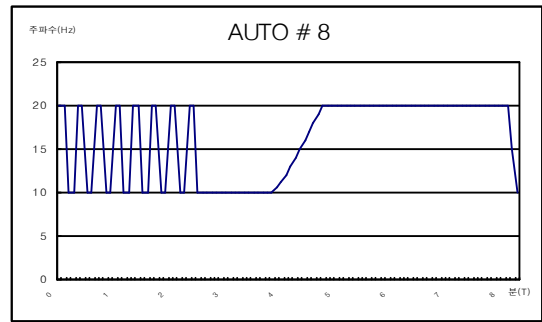
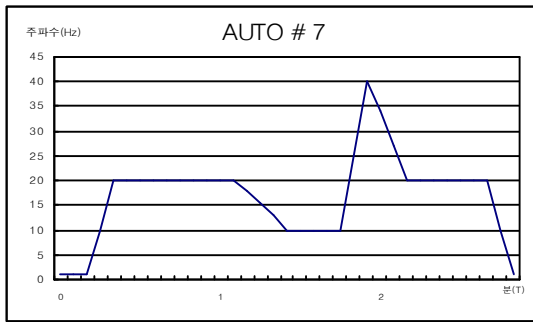
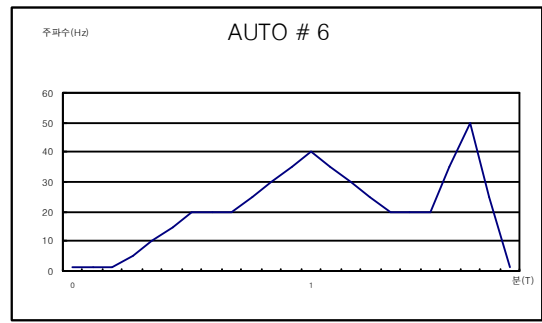
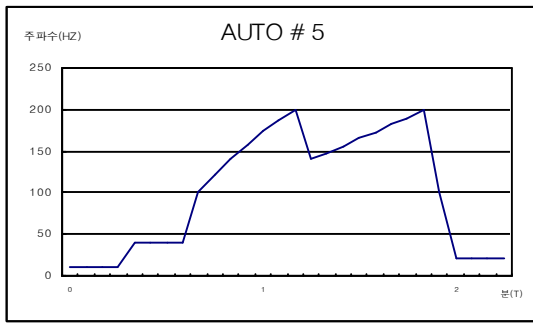
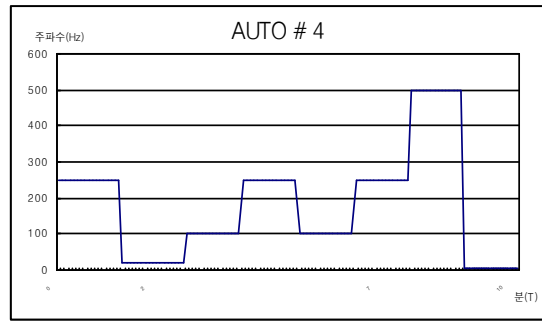
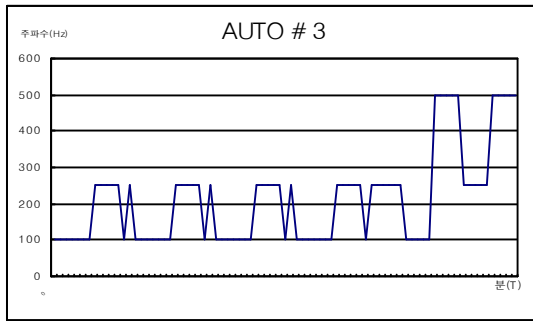
Built-in stimulation programs have stimulation patterns which are often used programmed into the low frequency device. Users can select this to maximize the stimulation efficiency. There are nine (AUTO #1 ~ AUTO #9) programs.

Stimulation patterns in AUTO MODE

- AUTO #1 ~ AUTO #9

· Stimulation patterns





◎ Auto Mode Operation Order

Auto 1	M3	1. 50Hz	Output for 15 seconds
		2. 25Hz	Output for 20 seconds
		3. 50Hz	Output for 40 seconds
		4. 75Hz	Output for 15 seconds
		5. 100Hz	Output for 10 seconds
		6. 150Hz	Output for 15 seconds
		7. 200Hz	Output for 45 seconds
		8. 150Hz	Output for 50 seconds
		9. 50Hz	Output for 80 seconds
		10. 100Hz	Output for 70 seconds

- | | | |
|--------|----|---|
| Auto 2 | M1 | <ol style="list-style-type: none"> 1. Change from 100Hz to 50Hz Output for 5 seconds 2. Change from 50Hz to 100Hz Output for 5 seconds 3. 1 and 2 repeated eight times 4. Change from 100Hz to 200Hz Output for 5 seconds 5. Change from 200Hz to 100Hz Output for 5 seconds 6. 100Hz Output for 5 seconds 7. 4, 5, 6 repeated eight times 8. Change from 100Hz to 200Hz Output for 10 seconds 9. Change from 200Hz to 300Hz Output for 5 seconds 10. 8 and 9 repeated six times 11. Change from 100Hz to 500Hz Output for 5 seconds 12. Change from 500Hz to 100Hz Output for 5 seconds 13. Change from 100Hz to 300Hz Output for 5 seconds 14. 11, 12, 13 repeated eight times 15. Change from 100Hz to 100Hz Output for 10 seconds 16. 500Hz Output for 20 seconds |
| Auto 3 | M2 | <ol style="list-style-type: none"> 1. 100Hz Output for 25 seconds 2. 250Hz Output for 25 seconds 3. 100Hz Output for 5 seconds 4. 250Hz Output for 5 seconds 5. 3 and 4 repeated five times 6. 250Hz Output for 25 seconds 7. 100Hz Output for 25 seconds 8. 500Hz Output for 25 seconds 9. 250Hz Output for 25 seconds 10. 500Hz Output for 25 seconds |
| Auto 4 | M4 | <ol style="list-style-type: none"> 1. 250Hz Output for 72 seconds 2. 20Hz Output for 72 seconds 3. 100Hz Output for 72 seconds 4. 250Hz Output for 72 seconds 5. 100Hz Output for 72 seconds 6. 250Hz Output for 72 seconds 7. 500Hz Output for 72 seconds 8. 7Hz Output for 72 seconds |
| Auto 5 | M1 | <ol style="list-style-type: none"> 1. 10Hz Output for 15 seconds 2. 40Hz Output for 20 seconds 3. Change from 100Hz to 200Hz Output for 36 seconds 4. Change from 140Hz to 200Hz Output for 36 seconds 5. Change from 200Hz to 20Hz Output for 10 seconds 6. 20Hz Output for 36 seconds |
| Auto 6 | M1 | <ol style="list-style-type: none"> 1. 1Hz Output for 10 seconds 2. Change from 1Hz to 20Hz Output for 20 seconds 3. 20Hz Output for 10 seconds |

4. Change from 20Hz to 40Hz Output for 20 seconds
5. Change from 40Hz to 20Hz Output for 20 seconds
6. 20Hz Output for 10 seconds
7. Change from 20Hz to 50Hz Output for 10 seconds
8. Change from 50Hz to 1Hz Output for 10 seconds

- Auto 7 M3
1. 1Hz Output for 10 seconds
 2. Change from 1Hz to 20Hz Output for 10 seconds
 3. 20Hz Output for 10 seconds
 4. 20Hz Output for 25 seconds
 5. 20Hz Output for 10 seconds
 6. 20Hz Output for 5 seconds
 7. Change from 20Hz to 10Hz Output for 20 seconds
 8. 10Hz Output for 25 seconds
 9. Change from 10Hz to 40Hz Output for 5 seconds
 10. Change from 40Hz to 20Hz Output for 20 seconds
 11. 20Hz Output for 25 seconds
 12. 20Hz Output for 10 seconds
 13. Change from 20Hz to 1Hz Output for 10 seconds

- Auto 8 M1
1. 20Hz Output for 5 seconds
 2. 10Hz Output for 5 seconds
 3. 1 and 2 repeated eight times
 4. 10Hz Output for 72 seconds
 5. Change from 10Hz to 20Hz Output for 50 seconds
 6. 20Hz Output for 72 seconds
 7. 20Hz Output for 50 seconds
 8. 20Hz Output for 72 seconds
 9. Change from 20Hz to 10Hz Output for 5 seconds

- Auto 9 M1
1. 50Hz Output for 44 seconds
 2. 10Hz Output for 40 seconds
 3. Change from 10Hz to 100Hz Output for 40 seconds
 4. 100Hz Output for 40 seconds
 5. 20Hz Output for 72 seconds
 6. Change from 20Hz to 50Hz Output for 40 seconds

- ① Turn on the power switch. If the output control volume is not in the zero position, the Zero Start alert will be notified.
- ② Press the AUTO mode button and select between AUTO #1~AUTO #9.
- ③ Press the MODE button and select the loop period.
- ④ Press the UP/DOWN button in TIME and select the operating time.
- ⑤ Attach the abdominal and low frequency pads to the area to be stimulated.
- ⑥ Turn the output control volume and start low frequency output.
- ⑦ Turn the output control volume to the intended output level.
- ⑧ When the preset stimulation time has ended, the termination sound will be sounded

while the signal is blocked.

- ⑨ When suspending the use, turn down the output control volume as much as possible.
- ⑩ When the device is not in use, take out the power plug.

(3) How to heat the abdominal pad

- ① Turn on the power switch. If the abdominal pad connector is not connected, ●LO ●MID ●HI LED in the TEMP display window will all flicker on and off and the alarm will be alerted.
- ② When the connector is connected, OFF, LO, MOD, HI can be set by pressing the TEMP button. During preheat, the low frequency output will not be working, and the heating function will turn off at the same time the low frequency output is started. Also, a bimetal to cut off the heater power in case the internal temperature becomes overheated(60°C) is embedded for safe cutoff.
 - Temp OFF setting : Heater power OFF
 - Temp LO setting : 30°C ±4°C
 - Temp MID setting : 35°C ±4°C
 - Temp HI setting : 40°C ±4°C

6. Troubleshooting

• Description of LED display window status

The current status is displayed in the top part of the LED. The status meanings are shown in the following.

- “-- ” **TIME FND** : When the low frequency output is overloaded, surpassing the maximum output, the output is automatically stopped and the alert sound is generated.
- “**ZERO CHK**” : When the INTENSITY volume is not at the zero position when the main power is turned on or the start key is pressed, the alert sound is generated. If the low frequency output was in process, then the low frequency output is automatically stopped.
- **Time Over** : The alert sound is generated when the preset time has passed. If low frequency output was in process, then the low frequency output is automatically stopped.

7. Electrical and Mechanical Characteristics

- (1) Voltage : AC 220V, 50/60Hz
- (2) Power consumption : 155VA
- (3) Output current : Maximum 28mA (in 500Ω non-inductive load resistance)
- (4) Output voltage : Maximum 65Vp-p (in 500Ω non-inductive load resistance)
- (5) Output frequency : (1, 3, 5, 7, 10, 20, 50, 100, 250, 500Hz)
 - Pulse shape definition : Up/down symmetrical trapezoidal waveform
- (6) Mode

Waveform shape	Characteristic
M1	The amplitude gradually increases and then returns to the initial value. This is repeated.
M2	Outputs the basic waveform without amplitude changes.
M3	Repeats applying the electric current and then pausing without amplitude changes.
M4	Amplitude changes are gradually increased and then decreased periodically. This is repeated.

(7) AUTO MODE

- AUTO #1 ~ AUTO #9

(8) Timer : Low frequency and heating time maximum 60 minutes

Electrical sound(buzzer) is generated when digital timer stops

(9) Abdominal pad heating

4 stages of temperature are OFF, LO, MID, HI

- Temp OFF setting : Heater power OFF
- Temp LO setting : 30°C ±4°C
- Temp MID setting : 35°C ±4°C
- Temp HI setting : 40°C ±4°C

A safety device(bimetal) is embedded to automatically cut off the heater power when the internal temperature becomes overheated(60°C)

8. Repair and A/S

• Repair and Service

- Trouble/defect

This device directly supplies electrical current to the patient's treatment area on the body so always take cautions for safety. If abnormality such as listed in the following occur, contact the manufacturer and distributor and take necessary measures. If device is judged not to be operating normally, use after receiving maintenance.

※ Trouble/defect state

- ① After attaching the abdominal and low frequency pads to the treatment area on the body, the output is not increasing when increasing the output current output intensity volume
- ② The device sometimes does not operate normally during stimulation
- ③ One or more of the LEDs in the control panel is not operating correctly while the power switch of the device is turned on.
- ④ The abdominal pad is not preheated during normal operation
- ⑤ Noise occurs from the device

! Before requesting maintenance

- This device has been strictly tested in the factory, but if thought to have trouble/defect, please contact the distributor.
- In case of trouble/defect due to breakdown or unknown cause, do not repair yourself but

request to the distributor or sales office for maintenance.

- When requesting maintenance, please include the following explanation.

Location to send the product after maintenance(address, name, telephone number, map of location).

CAUTION : Do not disassemble or repair and remodel other than the medical device manufacturer.
(Device repaired/remodeled by the unauthorized can not receive A/S.)
The device may catch fire or operate abnormally and injure people.

9. Items

- (1) Product Name : Personal Combined Stimulator (A83010), KM-BT1000
- (2) Manufacturer : KMG(KuMyung)
- (3) Manufacturer Address : 2F / 5F, Samsan B/D, 1157-30 Hadan-dong, Saha-gu, Busan
- (4) Manufacturer Tel. : 051) 804-2213
- (5) Manufacturer License No. : No. 1780
- (6) Manufacturing Product License No. : _____
- (7) Date of Manufacture: _____
- (8) Voltage: AC 220V, 50/60Hz
- (9) Power consumption : 155VA
- (10) Low frequency voltage : Maximum 65Vp-p (in 500Ω non-inductive load resistance)
Low frequency current : Output current : Maximum 28mA (in 500Ω non-inductive load resistance)
Low frequency range : (1Hz~500Hz),
Low frequency waveform : symmetrical trapezoidal waveform
Low frequency usage time : 1 min. to maximum 60 min.
- (11) Quantity : 1SET (12) Weight : approximately 10kg
- (13) How to use and cautions on use : Refer to attached document(User Manual)
- (14) Protection method against electrical shock and degree of protection :
Class 1, BF-type device
- (15) This device is for medical use.

9. Product Warranty

<Warranty Regulation>

The warranty period for the main body of the device is one year from the date of purchase. Accessories are excluded.

In the case of trouble/defect, include this product warranty in the product when requesting






maintenance to the purchased store or manufacturer.

Please take care as maintenance fees will be charged in the following situations during the warranty period.

- Trouble due to mishandling
- Trouble due to product remodeling or maintenance from places other than the designated A/S shops.
- Trouble and loss due to natural disasters such as fire, earthquake and flood damage.
- External cause of trouble, that is caused from somewhat other than the product
- Not mentioned in the product warranty

- ※ These regulations are valid for use inside the country.
- ※ These regulations are not to restrict the customer's rights.
- ※ The customer shall pay the transportation fees or other costs occurred for maintenance.

Product Warranty

Product Name	Personal Combined Stimulator	Model Name	KM-BT1000
SN	BT		
Intended Use		Package	1Box 1Set
Voltage	230V, 50/60Hz	Power Consumption	55VA
	CAUTION – Refer to accompanying documents.		
	KMG Co.,Ltd. 2F/5F Samsan B/D #1157-30 Hadan-dong, Saha-gu, Busan 604-851, Korea		
			
			

- ※ Please confirm the purchase location during purchase to be entitled to free maintenance and support.
- ※ Other Information :

